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(54) Impaction Instruments

(57) An instrument and method are provided for compacting bone chips into a prepared metaphyseal portion of a femur, in order to conform the femur to receive a femoral implant stem. The instrument comprises a tamping stem (10) having a shape and size corresponding to the implant stem. The instrument also comprises a plurality of wedge-shaped enlarging portions (22,24) ranging from largest to smallest. The method involves selecting appropriate sized enlarging portions, attaching the largest wedges to the instrument, placing the instrument into the femur, supplying bone chips, impacting the instrument to compact bone chips, and repeating compaction with successively smaller wedges until the femur is conformed to receive the femoral implant stem. Once inserted into the femur, the distal end of the instrument remains in contact with the diaphysis throughout the bone chip compaction process. Thus, bone chips cannot enter the diaphysis, and the instrument remains in proper alignment throughout the process.

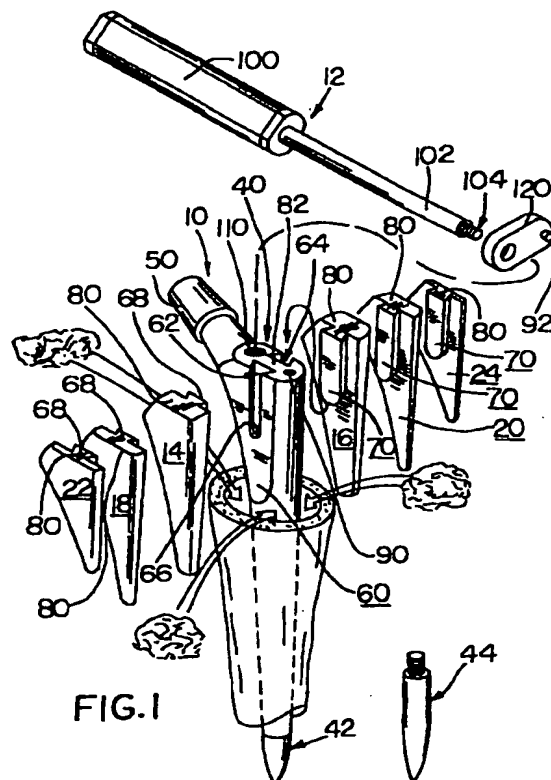


FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 7608

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	WO 96 09011 A (JOHNSON LANNY L) 28 March 1996 (1996-03-28)	7,9	A61F2/46
A	* claim 1; figures 4-6 *	1-6,8	
Y	US 4 718 915 A (EPINETTE JEAN-ALAIN) 12 January 1988 (1988-01-12) * column 5, line 52 - line 59 *	7,9	
A	EP 0 567 349 A (SMITH & NEPHEW RICHARDS INC) 27 October 1993 (1993-10-27) * abstract *	1	
A	WO 96 00539 A (HOWMEDICA) 11 January 1996 (1996-01-11) * abstract *	1	
D,A	US 5 470 336 A (VANDERLINDEN JACQUES J ET AL) 28 November 1995 (1995-11-28) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A61F A61B
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 9 February 2000	Examiner Korth, C-F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 7608

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The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-02-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9609011 A	28-03-1996	CA 2200201 A	28-03-1996
		EP 0783275 A	16-07-1997
		JP 10508505 T	25-08-1998
		US 5899907 A	04-05-1999
US 4718915 A	12-01-1988	FR 2579453 A	03-10-1986
		AT 47301 T	15-11-1989
		BR 8601357 A	02-12-1986
		CA 1258554 A	22-08-1989
		EP 0196258 A	01-10-1986
		JP 61226039 A	07-10-1986
EP 0567349 A	27-10-1993	US 4995883 A	26-02-1991
		US 5108452 A	28-04-1992
		AU 655532 B	22-12-1994
		AU 3294493 A	01-04-1993
		AU 3706593 A	28-10-1993
		AU 4914890 A	16-08-1990
		CA 2009343 A	08-08-1990
		CA 2094745 A	25-10-1993
		DE 69014667 D	19-01-1995
		DE 69014667 T	20-04-1995
		EP 0382429 A	16-08-1990
		ES 2064615 T	01-02-1995
		JP 3047253 A	28-02-1991
		JP 6007389 A	18-01-1994
		US 5507830 A	16-04-1992
		US 5047033 A	10-09-1991
		ZA 9000903 A	31-10-1990
WO 9600539 A	11-01-1996	AT 181815 T	15-07-1999
		AU 2351395 A	25-01-1996
		CA 2193689 A	11-01-1996
		DE 69510675 D	12-08-1999
		EP 0767638 A	16-04-1997
		JP 9507652 T	05-08-1997
		US 5601567 A	11-02-1997
US 5470336 A	28-11-1995	US 5192283 A	09-03-1993
		US 5047035 A	10-09-1991
		AT 170394 T	15-09-1998
		AU 675392 B	30-01-1997
		AU 2328795 A	14-09-1995
		AU 658440 B	13-04-1995
		AU 2393592 A	23-02-1993
		AU 8089291 A	02-03-1992

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 7608

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-02-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5470336 A		CA 2112108 A,C	04-02-1993
		DE 69226868 D	08-10-1998
		DE 69226868 T	15-04-1999
		EP 0595956 A	11-05-1994
		ES 2123565 T	16-01-1999
		JP 2525551 B	21-08-1996
		JP 7500027 T	05-01-1995
		WO 9202183 A	20-02-1992
		WO 9301773 A	04-02-1991
		US 5108405 A	28-04-1993
